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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,436	12/14/2005	Hirokazu Karasawa	017447-0193	8772
22428	7590	09/19/2007		
FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			EXAMINER KWOK, HELEN C	
			ART UNIT 2856	PAPER NUMBER
			MAIL DATE 09/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/560,436

Applicant(s)

KARASAWA ET AL.

Examiner

Helen C. Kwok

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 4 and 6-19 is/are rejected.
- 7) ☒ Claim(s) 2, 3 and 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/14/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claims 1-19 are objected to because of the following informalities.
Appropriate correction is required.

In claim 1, line 3, the phrase "the plural piezoelectric vibrators" should be changed to – the plurality of piezoelectric vibrators – to provide consistency for proper antecedent basis. In lines 5-6, the phrase "the plural piezoelectric vibrators" should be changed to – the plurality of piezoelectric vibrators --. In line 15, the word – imaging – should be inserted before the word "area".

In claim 9, line 6, the phrase "an area" should be changed to – the area --.

In claim 12, line 2, the phrase "the plural piezoelectric vibrators" should be changed to – the plurality of piezoelectric vibrators --.

In claim 13, line 2, the phrase "the plural piezoelectric vibrators" should be changed to – the plurality of piezoelectric vibrators --.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 4, 9 and 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, line 4, the phrase "the two-dimensional imaging data" lacks antecedent basis.

In claim 9, line 5, the phrase "the abnormal portion" lacks antecedent basis.

In claim 10, line 5, the phrase "the plural imaging data" lacks antecedent basis.

In claim 11, lines 3-4, the phrase "the inspection area" lacks antecedent basis.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 10, 12 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2004/0024320 (Karasawa et al.) in view of JP 2002-48867 (Kazuhiro et al.).

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With regards to claims 1, 10, 12 and 14-15, Karasawa et al. discloses ultrasonograph comprising, as illustrated in Figures 1-12, an ultrasonic transducer including a plurality of voltage oscillation elements which are disposed in a matrix array; a mechanical drive for driving the ultrasonic transducer; an oscillation element selection unit; a detection circuit for detecting the echo signals that are reflected from an object to be examined via a liquid or a solid acoustic medium; a signal processing unit for generating three dimensional imaging data by means of an aperture synthesis process; an image processing unit for displaying a three-dimensional image that corresponds to the values from the three-dimensional imaging data. (See, sections [0050] to [0100]). The only difference between the prior art and the claimed invention is changing brightness or transparency of the reflected echo by multiplying factors according to inspection position coordinates. Kazuhiro et al. discloses an acoustic survey device comprising, as illustrated in Figures 1-6, strength values of reflected echo signals that are multiplied by factors that are set according to inspection position coordinates to correct the strength values. (See, Abstract). It would have been obvious to a person of ordinary skills in the art at the time of invention to have readily recognize the advantages and desirability of employing the technique for correcting the strengths of the reflected echo signals as suggested by Kazuhiro et al. to the apparatus of Yoshimzumi to provide an improved and enhanced signal for displaying the three-dimensional ultrasonic image of the material to be tested.

With regards to claims 16-19, Kazuhiro et al. does not explicitly disclose the dimensions and configurations of the inspection object. However, it would have been obvious to a person of ordinary skills in the art at the time of invention to have consider using other dimensions or configurations without departing from the scope of the invention and is considered to have been a matter of design choice to the operator what test object to be inspected.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2004/0024320 (Karasawa et al.) as applied to claim 1 above, and further in view of U.S. Patent 5,475,613 (Itoga et al.).

With regards to claim 6, Itoga et al. discloses an ultrasonic device comprising, as illustrated in Figures 1-6, a display that shows the profile of the test object while superposing inspection data to be displayed. (See, column 5, line 9 to column 8, line 23). It would have been obvious to a person of ordinary skills in the art at the time of invention to have readily recognize the advantages and desirability so that the testing data is corrected for the shape measurement data of the test object to display it with the three-dimensional graphic image.

8. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2004/0024320 (Karasawa et al.) as applied to claim 1 above, and further in view of JP 11-118775 (Masaki).

With regards to claims 7-9, Masaki disclose an ultrasonic inspection device comprising, as illustrated in Figures 1-5, an abnormality judging/displaying

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part that calculates a surface area ratio of pixels corresponding to reflected ultrasonic signal data that has a prescribed level or higher and then determining whether there is an anomaly when the calculated value exceeds a prescribed value. (See, abstract). It would have been obvious to an artisan in the art the time of invention to have readily recognize the advantages and desirability of employing the abnormality judging/displaying part as suggested by Karasawa et al. to the device of Karasawa et al. to provide a device that can automatically determine whether the test object contains an anomaly without being inspected by the operator manually.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2004/0024320 (Karasawa et al.) as applied to claim 1 above, and further in view of JP 10-623396 (Hiroshi).

With regards to claim 13, Hiroshi discloses an ultrasonic scanning device comprising, as illustrated in Figures 1-17, an ultrasonic transducer having a plurality of voltage oscillation elements been disposed in a single row. (See, Abstract). It is well known in the art and an obvious design expedient to an artisan in the art to construct an ultrasonic transducer having a plurality of vibrators arranged in line without changing and/or altering the operation and/or performance of the device.

Allowable Subject Matter

10. Claims 2-5 and 11 are allowable over the prior art of record.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The references cited are related to three-dimensional ultrasonic imaging devices.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen C. Kwok whose telephone number is (571) 272-2197. The examiner can normally be reached on 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service

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Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Helen C. Kwok
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hck
September 14, 2007